Drinking Water Quality Report 2002

Photo by Jennifer Reeves

Public Utilities

Casper Water – Everyone is drinking it!

Casper water is a great value.

The money you pay for water is invested in the water supply, water treatment, and keeping the water lines and storage in top condition. The rate for delivering high-quality water to your tap compares favorably to water rates in other municipalities. The average residential customer pays two-tenths of one cent for a gallon of tap water — a bargain when compared to bottled water. One dollar will buy 472 gallons of tap water.

Photo by Jennifer Reeves

Water makes up almost two-thirds of the human body and helps nearly every part of the body function. Water:

- Regulates body temperature
- Protects and cushions vital organs
- Cushions joints
- Removes waste
- Helps the body absorb nutrients
- Helps convert food into energy
- Carries nutrients and oxygen to all cells in the body

*The **City of Casper** is pleased to provide you with our **Drinking Water Quality Report** for 2002. This report is a summary of the quality of water provided in 2002 and is required by the Environmental Protection Agency as part of the Safe Drinking Water Act. We gladly support this regulation, because we believe in your right to know.*

*The purpose of this report is to inform our customers about the **high-quality water** and services we deliver. The City of Casper supplies an average of 10 million gallons of drinking water each day to its customers. The water is purchased wholesale from the Central Wyoming Regional Water System who aggressively safeguards the water supply. Providing you with a safe and dependable supply of drinking water will remain our constant goal.*

*The **City of Casper** is proud to report that **our drinking water is safe** and meets all the **stringent** drinking water quality standards set forth by the Environmental Protection Agency.*

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Lead & copper in drinking water

The water you receive contains naturally occurring low levels of lead and copper. Lead and copper can also leach into your water from plumbing systems. Considered at risk are homes built before 1986 that may have copper pipes with lead solder or before 1950 that may have lead service lines. Also, brass fixtures, regardless of age, generally contain some lead.

Infants and children who drink water containing lead in excess of the action level (see table) could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Lead levels can easily be reduced by running the water 30 seconds to two minutes before using it. This is especially important if the water has not been used for six or more hours.

In our water

The 14 substances listed in the table below were detected in Casper's water during 2002. All are below levels allowed by federal regulations. We tested for 68 other regulated contaminants. They are not listed, because they were not detected. These include radioactive contaminants; pesticides, herbicides and other synthetic organic contaminants; and volatile organic contaminants. Additional information on the analysis can be obtained by calling Casper Public Utilities at 235-8213.

Your water is monitored 365 days a year. Tests are done before and after treatment and while your water is in the distribution system. The results are compared to the stringent contaminant level limits and goals set by the Environmental Protection Agency to ensure that your drinking water is safe.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily mean water may be a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

SUBSTANCE	VIOLATION	HIGHEST LEVEL ALLOWED (MCL)	HIGHEST LEVEL DETECTED	IDEAL GOALS (MCLG)	POTENTIAL SOURCES OF CONTAMINANT
Regulated at the Groundwater Sources and Treatment Plant					
Bromate	No	10 ppb	5.2 ppb	0	Drinking water ozonation by-product
Bromide	No	NA	77 ppb	NA	Naturally occuring
Fluoride	No	4 ppm	0.4 ppm	4 ppm	Erosion of natural deposits
Nitrate (as Nitrogen)	No	10 ppm	0.3 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium	No	not regulated	42 ppm	none set	Erosion of natural deposits
Turbidity	No	0.3	0.294 NTU	NA	Soil runoff
Cryptosporidium	No	2-log removal	< 1 CFU/100 ml	NA	Animal and human fecal waste
Aerobic Spores	No	NA	1.6/100 ml	NA	Naturally present in the environment
Regulated at the Consumer's Tap					
Lead	No	15 ppb AL no site exceeded AL	4 ppb AL	0	Household plumbing
Copper	No	1.3 ppm AL no site exceeded AL	0.87 ppm AL	1.3 ppm	Household plumbing
Regulated in the Distribution System					
Total Coliform Bacteria	No	< 5 % positive	1.4%	0	Naturally occurring
Asbestos	No	7 MFL	< 0.18	7 MFL	Decay of asbestos cement water mains; erosion of natural deposits
Total Trihalomethane	No	100 ppb	2.5 ppb	NA	Drinking water chlorination by-product
Haloacetic Acids (5)	No	60 ppb	3.7 ppb	NA	Drinking water chlorination by-product

Definitions

AL Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.

CFU Colony Forming Units: The number of visible growths of microorganism in a nutrient medium.

MCL Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available technology.

MCLG Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MFL Million Fibers per Liter: A measure of the presence of asbestos fibers that are longer than 10 micrometers.

NA Not applicable: The EPA has not requested monitoring for this contaminant.

ND Non-detects: The contaminant was monitored but not detected.

NTU Nephelometric Turbidity Unit: The measurement of the clarity of water.

pCi/L pico Curies per liter: A measure of the radioactivity in water.

ppm One part per million. The measurement corresponds to 1 minute in 2 years or 1 penny in $10,000.

ppb One part per billion. The measurement corresponds to 1 minute in 2,000 years or 1 penny in $10,000,000.

TT Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

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Sources of Casper's drinking water

The City of Casper purchases wholesale water from the Central Wyoming Regional Water System for your use. The water comes from two sources: groundwater and surface water. In order to meet the demand for water from May through September, groundwater is blended with surface water.

Groundwater provides an average of seventy-one percent of Casper's water. Groundwater is pumped from the North Platte River alluvial aquifer via 30 wells and is treated with ozone and chloramines for disinfection and a corrosion inhibitor to reduce corrosion of water mains and residential plumbing systems.

An average of twenty-nine percent of Casper's water is surface water drawn from the North Platte River. This water originates as snowmelt from the upper North Platte River basin and is clarified, disinfected with ozone, filtered, disinfected with chloramines, and treated with a corrosion inhibitor before it is released into the distribution system.


Photo by Jennifer Reeves

Drinking water: a precious resource

Less than one percent of all the water on earth is fresh water that can be used by people. Ninety-seven percent of the earth's water is in the oceans, and two percent is frozen in polar ice caps.

Photo by Jennifer Reeves

Sources of drinking water

All drinking water (both tap and bottled) comes from sources that include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can dissolve naturally occurring minerals and, in some cases, radioactive materials. It can also pick up substances resulting from the presence of animal or human activity.

Contaminants that may be present in source water before it is treated include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural operations and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic waste water discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that can come from agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants that can come from industrial processes, gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants that can be naturally occurring or the result of oil and gas production and mining activities.

Cryptosporidium & Giardia

Cryptosporidium and giardia are microscopic organisms that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. In recent years, these have been found in surface water across the country. Cryptosporidium can also be transmitted through contaminated food or direct contact with human or animal waste.

During the year, the Regional Water System had water samples tested for cryptosporidium and giardia. The samples were analyzed using a method approved by the Environmental Protection Agency, and neither organism was detected. This does not mean that any organisms were not present in the samples only that none were present in the portions examined.


Photo by Jennifer Reeves

Special considerations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Guidelines from the Environmental Protection Agency and the Centers for Disease Control on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.


Photo by Jennifer Reeves

A Message from the Central Wyoming Regional Water System

As part of the Interim Enhanced Surface Water Treatment Rule (IESWTR) governing treatment for the pathogen, cryptosporidium (40CFR Part 141, Subpart P), Environmental Protection Agency (EPA) requires a treatment technique for 99% removal. Water systems using surface water or ground water under the direct influence of surface water (GWUDI) must comply with this new treatment technique as of January 2002.

Currently, the Regional Water System utilizes ground water under the direct influence of surface water from collection devices along the North Platte River: vertical wells, horizontal wells or caissons, and an infiltration gallery. This water is not treated in a filtration plant, but it is ozonated and disinfected with chloramines. Alternative filtration such as riverbank filtration to the wells occurs through these devices.

Past operational data from the GWUDI system and current microbial data being collected from the North Platte River and the combined GWUDI system water indicate that the GWUDI system operates as an alternative filtration technology. The IESWTR provides that a public water system may use an alternative filtration technology if it demonstrates to the regulatory agency that the technology meets the treatment technique requirements.

EPA is granting conditional removal credit to the Regional Water System GWUDI system while a more detailed study is designed, and the Regional Water System completes the study to demonstrate the effectiveness of the alternative filtration technologies to remove cryptosporidium. During the study period, the Regional Water System will implement interim measures designed to ensure public health protection using the multiple barriers of alternative filtration and maximized inactivation with ozonation and chloramines. The turbidity of the water from individual GWUDI system devices will be continuously monitored, and turbidity performance requirements will be set for individual devices as well as the combined GWUDI system water.

The Regional Water System will have to meet all disinfectant byproduct regulations while maximizing ozone treatment; monitor the GWUDI system water and surface water sources for E. coli, cryptosporidium, and coliphage; and meet all other monitoring and treatment technique requirements of the surface water treatment rules. This conditional approval of 2-log removal will expire on January 1, 2004.

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Conserving water: an important act

A significant amount of water can be saved by following the lawn care during drought conditions guidelines:

- **Limit lawn watering.** A guideline is to water to a constant soil moisture depth of 12 inches. Insert a 12-inch screwdriver or stick to test for depth of moistness. This will vary by soil type and slope, and 12 inches of moistness may not be achievable for all lawns.
- **Fertilize only in the fall.** Fertilization stimulates growth that requires more water than simply keeping grass alive.
- **Use sprinklers** that throw large drops of water in a flat pattern. Otherwise, water is easily blown about and evaporates before hitting the ground.
- **Water** between 6–11 p.m. and 3–8 a.m.
- **Mow the lawn often** at no less than 3 inches.
- **Do not water** when it is windy or raining.

Photo by Dale Bohren


Photo by Jennifer Reeves

How can I get involved in water quality decisions?

We want our customers to be informed about their water utility. If you want to learn more, please attend any of the regularly scheduled meetings of the following groups:

Casper Public Utilities Advisory Board on the fourth Wednesday of every month at 7 a.m. in the Downstairs Meeting Room at Casper City Hall, 200 N. David St.
or
Central Wyoming Regional Water System on the third Wednesday of every month at 7 p.m. in the Conference Room at the Regional Water Treatment Plant, 1500 S.W. Wyoming Blvd.

Frequently Asked Questions

What is water hardness?

Hardness refers to dissolved minerals in the water (calcium and magnesium) that interfere with the sudsing action of soap. The harder the water, the less the sudsing action. The water you receive is hard with hardness levels that range from 200 ppm to 300 ppm (or 11.7–17.5 grains per gallon). A hardness less than 50 ppm (or 2.9 grains per gallon) is considered soft.

My water is cloudy sometimes but clears up. May I drink it?

The "cloudiness" is air trapped in tiny bubbles in the water. These harmless bubbles enter the water when air is drawn into the water transmission system. This is usually temporary, and the water clears in a short time.


Photo by Jennifer Reeves


Photo by Jennifer Reeves

Need more information?

Your questions, concerns, and observations are important to us. Contact Casper Public Utilities at 235-8213 or on the web at www.cityofcasperwy.com

For more information about potential health effects of water contaminants contact the U. S. Environmental Protection Agency at 800-227-8917; at the Safe Drinking Water Hotline (800-426-4791); or on the web at www.epa.gov/safewater